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ABSTRACT

State policymakers' efforts to promote teaching for understanding and thinking in elementary schools were assessed. Data were obtained through interviews of directors of state departments of education nationwide, interviews of two or more curriculum specialists in seven states judged to be particularly active in promoting higher order outcomes, and a review of curriculum-related documents cited during the interviews. Results indicated that state guidelines for curriculum reform were typically communicated through in-service programs, statements of goals and objectives, or guidelines for local curriculum planners. Reform initiatives rarely included statewide tests. Highlighted in the report are similarities and differences in policy initiatives of states actively promoting curriculum reforms. California was the only state that had aggressively negotiated with publishers to develop books or other instructional materials that supported the state's call for curriculum reform. Implications of the national findings are discussed. (RH)

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Elementary Subjects Center
Series No. 10

STATE GUIDELINES FOR RESHAPING ACADEMIC CURRICULA IN ELEMENTARY SCHOOLS: A 50-STATE SURVEY

Donald J. Freeman

Center for the Learning and Teaching of Elementary Subjects

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Center for the Learning and Teaching of Elementary Subjects

The **Center for the Learning and Teaching of Elementary Subjects** was awarded to Michigan State University in 1987 after a nationwide competition. Funded by the Office of Educational Research and Improvement, U.S. Department of Education, the Elementary Subjects Center is a major project housed in the Institute for Research on Teaching (IRT). The program focuses on conceptual understanding, higher order thinking, and problem solving in elementary school teaching of mathematics, science, social studies, literature, and the arts. Center researchers are identifying exemplary curriculum, instruction, and evaluation practices in the teaching of these school subjects; studying these practices to build new hypotheses about how the effectiveness of elementary schools can be improved; testing these hypotheses through school-based research; and making specific recommendations for the improvement of school policies, instructional materials, assessment procedures, and teaching practices. Research questions include, What content should be taught when teaching for conceptual understanding and higher level learning? How do teachers concentrate their teaching to use their limited resources best? and In what ways is good teaching subject matter-specific?

The work is designed to unfold in three phases, beginning with literature review and interview studies designed to elicit and synthesize the points of view of various stakeholders (representatives of the underlying academic disciplines, intellectual leaders and organizations concerned with curriculum and instruction in school subjects, classroom teachers, state- and district-level policymakers) concerning ideal curriculum, instruction, and evaluation practices in these five content areas at the elementary level. Phase II involves interview and observation methods designed to describe current practice, and in particular, best practice as observed in the classrooms of teachers believed to be outstanding. Phase II also involves analysis of curricula (both widely used curriculum series and distinctive curricula developed with special emphasis on conceptual understanding and higher order applications), as another approach to gathering information about current practices. In Phase III, test models of ideal practice will be developed based on what has been learned and synthesized from the first two phases.

The findings of Center research are published by the IRT in the Elementary Subjects Center Series. Information about the Center is included in the IRT Communication Quarterly (a newsletter for practitioners) and in lists and catalogs of IRT publications. For more information, to receive a list or catalog, or to be placed on the IRT mailing list to receive the newsletter, please write to the Editor, Institute for Research on Teaching, 252 Erickson Hall, Michigan State University, East Lansing, Michigan 48824-1034.

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Abstract

This survey assessed state policymakers' efforts to promote teaching for understanding and thinking in elementary schools. Data were provided by two rounds of interviews of curriculum specialists in state departments of education nationwide and a review of curriculum-related documents cited during the interviews. Results indicate that state guidelines for curriculum reform are typically communicated through inservice programs, goals and objectives statements, and/or guidelines for local curriculum planners. Reform initiatives rarely include statewide tests. The report highlights similarities and differences in policy initiatives of seven states that are actively promoting curriculum reforms and discusses implications of the national findings.

STATE GUIDELINES FOR RESHAPING ACADEMIC CURRICULA IN ELEMENTARY SCHOOLS: A 50-STATE SURVEY*

Donald J. Freeman**

The academic curriculum of America's elementary schools is besieged by critics. Some who seek reform portray the curriculum as narrowly focused on basic facts and skills with scant attention to students' conceptual understanding, problem solving, and thinking (e.g., Porter, in press). Others contend that school learning is severed from learning outside of school (Resnick, 1987) and are critical of the trivial instructional routines that characterize the teaching of most elementary school subjects (e.g., Cuban, 1984; Lanier & Sedlak, 1989; Romberg & Carpenter, 1986). In Cuban's words,

> The bulk of instructional time finds students listening to teachers talk, working on tasks that require little application of concepts, imagination, or serious inquiry. Description after description documents a Sahara of instruction demanding little thought from students beyond information already learned. What emerges unblurred is what Theodore Sizer calls a "conspiracy of the least, "a tacit agreement between teacher and student to do just enough to get by. (p. 661)

The call for curriculum reforms is bolstered by standardized test scores in reading, math, science, and writing. These data suggest that students' knowledge of basic concepts and skills outstrips their competence in solving problems, analyzing and evaluating reading passages, and pursuing other aspects of higher order thinking (e.g., Athey & Singer, 1987; National Assessment of Educational Progress, 1987). These scores also suggest that students in

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*An earlier version of this paper, coauthored by Danise Cantlon, Sharon Rushcamp, and Janet Vredevoogd, was presented at the annual American Educational Research Meeting in San Francisco, March 1989.

**Donald Freeman, professor of teacher education, is a senior researcher with the Center for the Learning and Teaching of Elementary Subjects. The author wishes to give special thanks to (a) those who reviewed earlier drafts of the manuscript, (b) project staff who conducted the interviews--Danise Cantlon, Sue McMahon, Sharon Rushcamp, Janet Vredevoogd, and Donna Weinberg--and (c) Jere Brophy and Andrew Porter for their insightful suggestions throughout the course of the study.

America's public schools lag behind their counterparts in many foreign countries, especially on measures of "higher order" outcomes (e.g., International Association for the Evaluation of Educational Achievement, 1988; McKnight et al., 1987). Results of the second international mathematics study, for example, indicated that "U.S. (eighth grade) students were slightly above the international average in computational arithmetic (calculation) and well below the international average in non-computational arithmetic (e.g., problem solving)" (McKnight et al., 1987, executive summary, p. 2).

Ironically, analyses of scores on standardized tests also spawned the accountability movement of the mid-1970s, a movement that critics often cite as a major force in misshaping the curriculum (e.g., Devaney & Sykes, 1988). Contemporary proponents of curriculum reform contend that state and district policymakers overreacted to declining test scores in the 1970s by designing minimum competency tests and other policy initiatives that persuaded most elementary school teachers to restrict the focus of their instruction to basic skills development. The publication of A Nation at Risk by the National Commission on Excellence in Education in 1983 launched a curriculum reform movement that sought to counter that imbalance. This more recent call for educational reform challenged teachers to adopt more dynamic instructional routines and to expand the curriculum "beyond the basics" to provide meaningful coverage of problem solving, conceptual understanding, and other aspects of higher order thinking. This movement also challenged educational policymakers to design policy initiatives that would persuade teachers to modify their instruction in these ways.

The basic purpose of this survey was to assess the progress of state-level policymakers in reaching this goal. Stated in simple terms, we wanted to know to what extent and in what ways state policy initiatives encourage elementary

school teachers to teach for conceptual understanding, problem solving, and other aspects of higher order thinking. What initiatives are most likely to play a prominent role in the press to provide a more balanced curriculum? What assumptions characterize these efforts?

Procedure

The design of the study called for two rounds of telephone interviews: (a) interviews of directors of elementary education (or their equivalents) in state departments of education in all 50 states, followed by (b) interviews of two or more curriculum specialists in states judged to be particularly active in promoting "higher order" outcomes. Most of the participants in the initial round of interviews were directors of elementary education (38%) or curriculum specialists (34%) in state departments of education.

The second round of interviews was conducted in seven states that were judged to be particularly active in promoting the teaching of higher order outcomes in at least one academic subject--California, Hawaii, Indiana, New York, North Carolina, Missouri, and Utah.[1] Interviews were completed in each of these states with at least three spokespersons: (a) the director of elementary education (or his/her equivalent), (b) the curriculum specialist in mathematics (to establish a common baseline across all eight states), and (c) the specialist in a second academic subject in which a press for higher order outcomes was cited in the initial interview.

The initial round of 50 interviews was completed during a three-month period from November 1987 through January 1988; the follow-up interviews were completed in February and March 1988. During both rounds, we asked participants to send us copies of the curriculum-related documents they cited (e.g., curriculum guides). We received documents of this type for 35 of the 36 states

in which they were requested. Summary reports were prepared for each interview and for each of the more active states. Each of these reports conformed to a predetermined outline centering on the questions cited in the introduction. These summaries, coupled with the curriculum-related documents, served as the data base for this report.

Results

Policy Frameworks Across All 50 States

Forty-three of the 50 participants in the first round of interviews reported that their state was making a special effort to encourage elementary school teachers to teach problem solving, conceptual understanding, and other aspects of higher order thinking. These individuals were asked (a) to describe the policies and practices their state has initiated to encourage elementary school teachers to pursue this goal and (b) to indicate which of these initiatives ranks as most important. Responses are summarized in Table 1.

As these data indicate, state-level policy initiatives to promote a more balanced curriculum in elementary schools were most likely to take the form of inservice programs, goals and objectives statements for teachers, guidelines for developing local curriculum guides, or statewide tests.[2] These four initiatives accounted for 78 of the 94 (83%) policies or practices that were cited across all states. Less frequently cited initiatives included gifted and talented programs, special publications for teachers, textbook adoption policies, and incentive grants to local districts.

Characteristic Features/Assumptions

Number of initiatives? Across most of the 43 states, the message that elementary school teachers should teach for thinking and understanding was

Table 1

Policies To Encourage Elementary School Teachers To Teach For "Higher-Order" Outcomes (n = 43 states)

	Only Initiative	Primary Initiative[a]	Secondary Initiative[b]	Total Number
Inservice Programs	5	12	18	35
Goals and Objectives Statements for Teachers	2	14	2	18
Guidelines for District Curriculum Planners	3	6	6	15
Statewide Tests	0	4	6	10
Special Publications for Teachers	0	0	5	5
Gifted and Talented Programs	0	0	5	5
Textbook Adoptions	0	1	3	4
Incentive Grants to Districts	0	1	1	2

[a]Primary Initiative - The policy or practice respondents ranked as most important. Participants in five states cited two initiatives when asked to identify the most important policy or practice.

[b]Secondary Initiative - A policy or practice included in the policy framework for a given state that was not ranked as the most important.

communicated through only one (23%) or two (49%) policy initiatives (see Part 1 of Table 2). Only 12 respondents (28%) said their state's curriculum reform guidelines were expressed in three or more policies or practices. The most common pairings of policy initiatives were inservices and goals and objectives statements (14 of the 43 states) or inservices and guidelines for local curriculum planners (11 of the 43 states).

New initiatives? Despite these relatively modest levels of policy activity, only 15 of the 50 participants said that their state is likely to begin new initiatives in the next year or two to enhance efforts to promote a more balanced curriculum. Within this subset, 2 states will introduce new or revised goals and objectives statements emphasizing higher level outcomes, three states plan to encourage teaching for understanding and thinking across a broader range of subjects, 4 will develop publications focusing on this goal, and 6 will upgrade their inservice programs in this area.

Differential emphasis across subjects? In 25 of the 43 states (58%), the press to teach for higher order outcomes was stronger in some subject areas than in others. Within this subset of states, policy guidelines were most likely to promote teaching for thinking and understanding in elementary school mathematics; they were least likely to promote these goals in art or music (see Part 2a of Table 2). As shown in Part 2b, a similar differential held in regard to subjects that were addressed by the most important initiative within each state's policy framework (e.g., subjects covered by the state's inservice program). Once again mathematics topped the list, followed by science, social studies, literature, and art/music. This rank order generally held across all four initiatives--inservices, goals and objectives statements for teachers, guidelines for local policymakers, and statewide testing.

Table 2

Characteristic Assumptions/Features of States' Initiatives

1. Number of Initiatives (n = 43 states)

One	10 (23%)	Three	6 (14%)
Two	21 (49%)	Four/Five	6 (14%)

3. Generic or Subject Specific?

Subject-Specific	25 (58%)
Generic	2 (5%)
Both	16 (38%)

2. Differential Emphasis Across Subjects?

a. No = 18 states (42%)

Yes = 25 states (58%) ----> Which Subjects?

Mathematics	24 (96%)	Literature	6 (24%)
Science	21 (84%)	Art/Music	1 (4%)
Social Studies	10 (40%)		

b. Number of states providing inservices, goals and objectives statements for teachers, guidelines for local policymakers, or tests focusing on a given subject area where these policies served as the primary initiative(s).

	State's Primary Initiative			
	Inservices (n = 17)	Goals (n = 16)	Guidelines[a] (n = 7)	Tests (n = 4)
Mathematics	17 (100%)	16 (100%)	7 (100%)	4 (100%)
Science	17 (100%)	15 (94%)	6 (86%)	2 (50%)
Social Studies	14 (82%)	12 (75%)	6 (86%)	2 (50%)
Literature	13 (76%)	10 (63%)	4 (51%)	1 (20%)
Art/Music	11 (65%)	9 (56%)	5 (71%)	0 (0%)

[a]The data were missing for two states in this category.

Generic or subject-specific? Across a majority (58%) of the 43 states, policies and practices to promote teaching for higher order thinking were grounded in the assumption that thinking should be taught as part of every academic subject (see Part 3 of Table 2). In two states, policymakers assumed that higher order thinking should be taught as a separate subject. Policy initiatives in the other 16 states called for a combination of teaching higher order thinking within each subject and as generic skills.

Policy Strength and Impact

Relative emphasis on higher order thinking and basic skills? Sixteen of the 43 respondents (39%) said their state's policy guidelines place greater emphasis on teaching basic skills than on teaching for understanding and thinking (See Part 1 of Table 3). Respondents in 16 other states (39%) said the emphasis on higher order thinking was about equal in strength to the call for teaching basic skills; only 9 (22%) reported that their state's press for higher order thinking was greater than that for basic skills.

The data in Parts 2 through 4 of Table 3 describe interactions between a state's commitment to emphasize higher order thinking and other policy characteristics. In these analyses, states that placed equal or greater emphasis on higher order thinking were compared with those that placed more emphasis on basic skills. The results indicate that the 25 states placing equal or greater emphasis on higher order outcomes were more likely to (a) use a variety of initiatives to encourage elementary school teachers to teach for conceptual understanding and thinking--Part 2, (b) include inservices, tests, and textbook adoptions in the policy framework aimed at this goal--Part 3, and (c) assume that higher order thinking should be taught as part of every academic subject and not as separate generic skills--Part 4.

Table 3

Interactions Between Emphasis on Higher Order Outcomes (H.O.'s) and Other Policy Characteristics

1. Differential Emphasis on "Higher Order" Outcomes and Basic Skills?[a]

Greater Emphasis on Basics	16 states (39%)
Equal Emphasis	16 states (39%)
Greater Emphasis on Higher Order Outcomes	9 states (22%)

2. Mean Number of Initiatives

	Mean
Basics	1.75
H.O.'s	2.60

4. Generic or Subject Specific?

	Subject Specific	Generic	Both
Basics	38%	13%	50%
H.O.'s[c]	71%	0%	29%

3. Types of Policy Initiatives

	Inservice	Goals	Guidelines	Tests	Texts	Other[b]
Basics	9 (56%)	6 (38%)	5 (31%)	1 (6%)	0 (0%)	7 (44%)
H.O.'s	24 (96%)	11 (44%)	9 (36%)	9 (36%)	4 (16%)	6 (24%)

[a]Basics = Greater emphasis on basic skills than on higher order outcomes (n = 16).
H.O.'s = Equal or greater emphasis on higher order outcomes than on basic skills (n = 25).

[b]The "Other" policies are listed in Table 1.

[c]This information was missing for one state in this category.

Impact on practice. Respondents in 15 of the 43 states (35%) reported that their state's curriculum reform efforts were too new to assess their impact on classroom practice or they didn't have enough information to make this judgment. Among those who did judge, 18 (42%) reported that their state's initiatives have had a modest or significant impact on instruction in elementary schools and 10 (23%) said their state's efforts have had a very limited impact.

Policy Frameworks in the Most Active States

As noted in the introduction, seven states were judged to be among the most active in their attempts to encourage elementary school teachers to teach for conceptual understanding, problem solving, and other aspects of higher order thinking--California, Hawaii, Indiana, New York, Missouri, North Carolina, and Utah. As shown in Table 4, the policy frameworks across these seven states varied, but typically included three central elements: (a) goals and objectives statements for teachers, (b) inservice programs, and (c) statewide tests. Four states also considered the ways in which textbooks treated higher order outcomes during the state adoption process. California's efforts to encourage elementary school teachers to teach for understanding and thinking were more comprehensive than those of any other state. Closer consideration of California's curriculum reform policies and practices may, therefore, be instructive to state-level policymakers and others promoting curriculum reforms.

Overview of California's policy framework. California's press to encourage elementary school teachers to teach for thinking and understanding was formally launched by the legislature's passage of the Hughes-Hart Education Reform Act (Senate Bill 813) in 1983. This act required the newly elected State

Table 4

Overview of Policy Initiatives in The Seven Most Active States[a]

	Goals & Objs. or Guidelines?	Inservice Programs?	State Tests?	Textbook Adoptions?
California	Goals[b]	Yes	Yes	Yes
Hawaii	Goals	Yes	Yes	No
Indiana	Guidelines	Yes	Yes	Yes
Missouri	Goals	Yes	Yes	No
New York	Goals	Yes	Yes	No
N. Carolina	Goals	Yes	Yes	Yes
Utah	Goals	Yes	No	Yes

[a]Each state's primary initiative is underlined.

[b]As noted in the text, California's frameworks and curriculum guides describe desired learner outcomes in narrative terms and not as lists of goals and objectives. Because the curriculum frameworks provide the conceptual foundation for all of the other policy initiatives, they are generally recognized as the primary initiative.

Superintendent of Public Instruction, Bill Honig, to increase high school graduation requirements and to develop model curriculum standards for California's public high schools. The emphasis on higher order thinking in elementary schools was an extension of that charge.

Working in collaboration with the State Board of Education and the State Curriculum Commission, committees appointed by Superintendent Honig began the task of updating or revising curriculum frameworks in each subject area to reflect a concern for conceptual understanding and higher order thinking from kindergarten through Grade 12. In accord with a seven-year cycle plan for curriculum review, one framework served as the focus of attention each year. Since 1983, revised frameworks for science (1984), mathematics (1985), English-language arts (1987), history-social science (1988), and foreign languages (1988) have been approved by the State Board of Education. The visual and performing arts framework developed in 1982 will be republished in 1989; an updated framework in health will be released in 1991. This set of seven curriculum frameworks serves as the backbone of California's press to teach for conceptual understanding and thinking.

California's curriculum frameworks describe the philosophy and nature of programs in each content area and guide efforts to reshape the elementary school curriculum along four other policy fronts: (a) the development of curriculum guides for teachers, (b) statewide tests, (c) instructional materials adoptions, and (d) inservice and teacher training programs. The framework in mathematics, for example, outlines the content and structure of the mathematics program, the delivery of instruction in mathematics, and the standards for mathematics textbooks and instructional materials. The conceptual orientation of the framework is highlighted in its introduction:

> The inherent beauty and fascination of mathematics commend it as a subject that can be appreciated and enjoyed by all learners. The study of mathematics helps students to develop thinking skills, order their thoughts, develop logical arguments, and make valid inferences . . . . Mathematical power which involves the ability to discern mathematical relationships, reason logically, and use mathematical techniques effectively, must be the central concern of mathematics education and must be the context in which skills are developed. (California State Department of Education, 1985, p. 1)

The English-language arts framework is a "literature-based" program, emphasizing reading comprehension and calling for teachers to provide opportunities for pupils to listen to, read, discuss, and write about good literature. The new framework in history-social science emphasizes history integrated with the social sciences, geography, and humanities as the core of the social studies curriculum (Alexander & Crabtree, 1988). It also encourages teachers to teach content in greater depth and to use literature to enrich the study of history. A revised framework in science will be released in 1989 and will emphasize themes that provide an organizational framework for key concepts, scientific attitudes, ethical concerns, and process skills (e.g., inferring, predicting). Like recent work of the National Science Teachers Association and the American Association for the Advancement of Science, the revised framework will also emphasize an integrated approach to the conceptual learning of science. The 1982 framework for the visual and performing arts will be republished in 1989. This action will continue the state's emphasis on teaching the arts from a problem-solving and conceptual understanding perspective, a perspective that is compatible with the "discipline-based" approach to art education advanced by the Getty Center for Education in the Arts and the National Art Education Association. The health framework committee will begin its deliberations in 1990.

California's model curriculum guides for kindergarten through Grade 8 translate the frameworks into guidelines for elementary and middle school teachers. The guides describe desired topical coverage at each of three grade ranges (Grades K-3, 3-6, and 6-8) and provide specific examples of the kinds of lessons teachers can use to engage pupils in higher order thinking. To date, model curriculum guides have been prepared for elementary and middle school teachers in mathematics (1987), science (1987), and English-language arts (1988). Comparable guides for history-social science, visual and performing arts, physical education, and foreign languages are currently being developed.

The frameworks and model curriculum guides are backed by the California Assessment Program (CAP). The program currently includes tests of reading, mathematics, and writing in Grades 3, 6, 8, and 12 and tests of history and science in Grade 8. CAP results are reported for each school, but not for individual students. The 8th-grade tests were added to the CAP program in 1984 through 1986 and align with the revised frameworks stressing higher order thinking. Since then, the 12th-grade tests of reading, math, and writing have also been revised and direct assessments of students' writing have been added to the 8th- and 12th-grade tests. Prior to these developments, all tests in the California Assessment Program emphasized basic knowledge and skills. The 3rd- and 6th-grade tests still do. Efforts are, therefore, underway to revise these and all of the other CAP tests to align more closely with the new frameworks. Efforts are also underway to add 6th- and 12th-grade tests of history and science, a 6th-grade writing assessment, and a 10th-grade test. The new tests will feature integrated reading and writing assessment, at least some open-ended questions in mathematics, and performance tasks in history and science. Students will be asked to write about situations or problems (e.g.,

describe an experiment), talk about what they have done, and participate in group problem solving activities.

The most widely publicized initiative in California's policy framework is the textbook adoption plan. Formal reviews of instructional materials in California are guided by standards that are spelled out in each curriculum framework. In mathematics, 28 standards describe the ways in which textbooks and supplementary materials for kindergarten through Grade 8 are expected to align with the mathematics curriculum outlined in the framework: For example, "Lessons for every student, below as well as above average, include the major concepts and skills of every strand. No student is excluded from studying some areas because of difficulty with other areas" (California State Department of Education, 1985, p. 20). In 1985, California refused to adopt science textbooks that ignored theories of evolution or overlooked important ethical concerns. In 1986, all of the proposed K-8 series in mathematics were rejected because they failed to address the math framework adequately. According to the state's director of mathematics education, these rejections led publishers to replace or substantially rewrite about 10% of the material in the six mathematics series that were ultimately approved. Most recently, the State Board of Education reinforced the emphasis on "real" literature in the English-language arts framework by refusing to adopt textbook series that use literature as "window dressing" while focusing on isolated skill development.

As the final piece in the puzzle, California sponsors a number of professional development activities that center on the curriculum frameworks and guides. During the year in which a new framework is released, for example, the State Department of Education sponsors regional conferences throughout the state to increase teachers' and administrators' awareness of the new framework. During the next two years, the State Department provides technical

assistance and other forms of support for district-level curriculum development activities focusing on the subject area addressed by the framework. During this period, the State Department also sponsors two-day invitational conferences to help curriculum leaders from throughout the state implement the new framework in their local districts. This goal is also addressed in the California School Leadership Academy Program for school administrators.

Collectively, these five policy initiatives--curriculum frameworks, curriculum guides, statewide tests, textbook adoptions, and staff development programs--communicate a consistent message to elementary school teachers calling for increased emphasis on teaching for understanding and thinking. Because California is a local control state, this message takes the form of an appeal and not a mandate (see Timar & Kirp, 1988). And, because of the scope and magnitude of the task, the effort is viewed as a long-range, 15- to 25-year commitment and not as a short-term endeavor.

Contrasts with other active states. Simply stated, California's efforts to promote teaching for understanding and thinking are "state of the art." Although textbook adoption practices in Indiana, North Carolina, and Utah also consider the ways in which a textbook series treats higher level outcomes, California is the only state that has aggressively negotiated with publishers to develop books or other instructional materials that support the state's call for curriculum reform. Likewise, California and New York are the only states designing statewide testing programs that feature performance tests such as group problem-solving activities as well as paper-and-pencil tests centering on higher level outcomes. Although Missouri and Indiana's efforts to test students' understanding and thinking are noteworthy, these efforts are limited to paper-and-pencil tests.

State testing programs in North Carolina and Hawaii combine assessments that focus directly on selected portions of the state's curriculum (e.g., formal observations centering on North Carolina's first- and second-grade curriculum; criterion-referenced tests addressing Hawaii's "Foundation Program") with commercially prepared standardized tests that are only moderately aligned with the state's goals and objectives. In Utah, the responsibility for assessing student attainment of the state's core curriculum is vested in local boards of education. Nevertheless, the State Department of Education assists in this process by making pools of test items that align with the state's goals and objectives available to local boards.

Each of the seven active states sponsors inservice activities focusing on teaching for thinking within specific subject areas. In Hawaii, teachers are also encouraged to teach thinking as a general skill. State-level professional development programs in California, New York, and North Carolina are more comprehensive than those in most other states. Each of these states sponsors summer institutes that promote individual teacher growth in specific subject areas or train teachers to function as curriculum leaders in their local districts. California and North Carolina also organize annual conferences for curriculum leaders from throughout the state that center on district-level implementation of the state's curriculum guidelines. However, California appears to be the only state that sponsors an extended inservice program for school administrators that considers curriculum implementation strategies.

In each of the seven active states, the goals and objectives statements or curriculum guidelines have been recently updated to reflect a greater emphasis on teaching for thinking and understanding. Yet, even in this area of policy activity, California's initiatives are qualitatively different from those in the other states. California's frameworks and curriculum guides describe

desired learner outcomes in relatively general or narrative terms and not as lists of goals and objectives to be covered. Moreover, with the exception of the history-social science framework, intended outcomes are cited for the lower and upper elementary levels (Grades K-3 and 3-6) and not for each grade. For example, "an essential understanding" presented in the model curriculum guide in mathematics reads, "It is essential for students to understand that the degree of precision needed in calculating a number depends on how the result will be used" (California State Department of Education, 1987, p. 22). The decision to describe desired learner outcomes in relatively general terms is part of an overall effort to encourage teachers to move from teaching mathematics and other subjects as a series of discreet skills to the adoption of more holistic, integrated approaches to instruction stressing student understanding and thinking. The implicit assumption seems to be that state guidelines cannot successfully move teachers in this direction if intended outcomes are expressed as lists of specific goals and objectives.

In contrast, goals and objectives statements in New York, Missouri, North Carolina, and Utah provide comparatively detailed descriptions of desired learner outcomes and list these intended outcomes for each grade level. For example, a third-grade objective in the recommended math program in New York reads, "Develop and solve problems created from menus, supermarket flyers, and mail-order catalogs" (University of the State of New York, 1987, p. 32). Goals and objectives statements in Indiana, New York, and North Carolina also provide specific examples, as needed, to clarify an objective.

In summarizing what we had learned from some of our earlier work at the Institute for Research on Teaching, we argued that curriculum-related policies are most likely to influence teachers' content decisions when they are prescriptive, consistent, and authoritative (see Porter, Floden, Freeman,

Schmidt, & Schwille, 1986). Policies are prescriptive to the extent that they provide comprehensive and specific descriptions of what teachers should do. Whereas California's curriculum frameworks and guides provide more prescriptive descriptions of strategies for teaching than the documents describing goals and objectives in the other active states (except Missouri), they are less specific and, therefore, less prescriptive in describing content to be taught. As a result, inservice programs and other policy initiatives play a more critical role in communicating the state's content messages to teachers in California than is true in the other active states.

Discussion

Minimum competency tests were the backbone of the accountability movement of the 1970s. Yet tests are rarely included in state policy frameworks to encourage elementary school teachers to teach for conceptual understanding and thinking. Here, the dominant policies are inservice programs and goals and objectives statements for teachers or guidelines for local curriculum planners.

Emphasis on Inservice Programs

The more prominent role of inservice programs in the present reform movement should come as no surprise. The back to basics movement called for teachers to restrict, rather than to expand, the range of content they were already covering and posed no challenge to their subject matter knowledge. Accountability-oriented guidelines were also consistent with most teachers' intuitive notions about the content students need to learn (see Porter, in press) and justified their use of seatwork and other repetitive instructional routines. Thus, responses to the press for accountability reduced the cognitive complexities of the classroom for both teachers and students (see Doyle, 1983; Sedlak, Wheeler, Pullin, & Cusick, 1986). In contrast, the recent call for a more balanced and dynamic curriculum runs counter to most teachers'

adaptations to the complexities of teaching and may tax their understanding of the subject matter. This movement presses many teachers to teach content that they have rarely considered using methods that are not currently in their well-rehearsed repertoires. Thus, the press for curriculum reforms creates a clear need for state-sponsored inservice programs to (a) persuade teachers to make changes in both "what" they teach and "how" they teach it and (b) provide a strong sense of direction and support for those who are willing to pursue this goal.[3]

Lack of Emphasis on Statewide Tests

Most states have well established statewide testing programs dating back to the accountability movement of the mid-1970s. A 1987 survey by the Council of Chief State School Officers indicated that 35 states assume primary responsibility for collecting and reporting student accountability data; in nine other states including California, this responsibility is shared with local districts (see State Accountability Systems, 1988). In the 1970s, most accountability-oriented tests focused on minimum competencies. In the mid-1980s, the domain was broadened to provide more comprehensive tests of basic skills. Yet, even with this shift in focus, only 10 respondents named statewide tests when asked to describe their states' policies and practices to encourage elementary school teachers to teach for understanding and thinking. In other words, accountability-oriented tests in all but a few states continue to center on "lower level" rather than "higher level" learning outcomes.

State policymakers' reluctance to implement testing programs that emphasize higher level outcomes is predictable. Simply stated, it is far easier to design and implement tests of basic knowledge and skills than to design and implement tests of students' conceptual understanding and thinking. And, whereas scores on tests of lower level objectives have steadily improved, there

is a genuine concern that students will score poorly on tests of higher level outcomes, a condition that is likely to elicit a strong, negative public response. Nevertheless, it is evident that testing programs centering solely on the basics send messages to teachers that obfuscate the call for a more balanced curriculum.

Assumptions About Student Learning

Policies and practices to promote the teaching of understanding and thinking are grounded in implicit or explicit assumptions about student learning. The results of this survey suggest that most state policy frameworks are based on the assumption that the best approach is to teach higher order thinking within each subject area rather than as separate generic skills. This position is consistent with the thesis that thinking skills have limited transferability (e.g., Devaney & Sykes, 1988; Schoenfeld, 1985). Schoenfeld, for example, argues that heuristic strategies in mathematics

> are far more complex and subtle than they appear to be on the surface, and mastering them even in fairly ideal situations is nontrivial. Transfer is much more difficult than mastery, for even if a student masters a strategy in one context it may be difficult for the student to see how to use it in another. (p. 191)

Nevertheless, some educators believe that thinking skills can be taught directly (see Marzano et al., 1988). Rosaen's (1988) review of 12 programs designed to teach general thinking skills concluded that programs of this type can be effective if they (a) have multiple goals, (b) are coupled with teaching for thinking within subject areas, and (c) include features that will increase the likelihood of transfer (e.g., teachers receive extensive training in using the materials).

The results of this survey also suggest that state policy frameworks are often grounded in the assumption that students must master basic skills before

attempting problem solving or other aspects of higher order thinking. This assumption was central to most accountability-oriented policies and practices that stressed basic skills development. The fact that survey participants in all but nine states said their state's policies continue to place as much or more emphasis on teaching basic skills as on higher order thinking raises serious questions about the extent to which policymakers have critically examined this assumption. This apparent oversight has significant implications. If an instructional system requires students to master basic knowledge and skills before being allowed to work on higher level cognitive outcomes, it is evident that the more capable students will have more ready access to higher levels of learning than their less capable classmates. Thus, policies that are firmly grounded in the assumption that mastery of basic skills must precede work on higher level outcomes are likely to promote inequities in opportunities to learn problem solving, conceptual understanding, and other aspects of higher order thinking.

However, a growing body of research literature challenges this assumption (e.g., Brown, Collins, & Duguid, 1988; Lanier & Sedlak, 1989). Following their review of this literature, Lanier and Sedlak conclude,

> Although it is essential that all students acquire basic skills, contemporary practice rests on the faulty assumption that students should learn basic skills first, before encountering academic work that demands more complex intellectual skills. This deceptively simple notion about teaching and learning is simply wrong. (pp. 122-123)

Lanier and Sedlak cite a number of studies in which researchers have demonstrated that it is possible to successfully integrate instruction focusing on both higher order cognitive outcomes and basic skills. To date, these studies have centered on three subject areas--reading (e.g., Athey & Singer, 1987; Palinscar & Brown, 1984), writing (e.g., Bereiter & Scardamalia, 1987),

and mathematics (e.g., Fennema, Carpenter, & Peterson, in press; Lampert, 1985; Schoenfeld, 1985). To the extent that subsequent research confirms that this integration is feasible in other subjects and across a wide array of instructional contexts, state-level policymakers will need to reconsider many of the curriculum reform policies and practices that are currently in place.

Concluding Statement

California and a few other states have taken major steps to reshape the elementary school curriculum (see Table 4). Policy initiatives in these states are multifaceted and carefully planned. But, this level of coherence and commitment does not extend beyond these flagship states. Seven survey participants reported that their state was not making any special effort to encourage elementary school teachers to teach for understanding or thinking. Sixteen others said their state emphasized basics more than higher order outcomes. Reports in several other states portrayed fragmented, incomplete efforts. Policymakers in most of these states overlooked the need to align statewide tests with other curriculum reform initiatives. Many also failed to examine critically their implicit assumptions about student learning. Thus, it is highly unlikely that state-level calls for a more balanced curriculum echo loud and clear through a majority of our nation's elementary schools.

Still, it is noteworthy that only four years after the publication of A Nation at Risk, all but seven states were taking at least some steps to promote a more balanced curriculum in elementary schools. In most states, it remains to be seen whether these steps signal the beginning of a significant transition in policy initiatives or are simply minor modifications in established policies and practices designed to enhance basics skills development. Moreover, even in those states that are clearly committed to the goals of the present reform

movement, it is too early to determine whether state-level policy initiatives will have a significant impact on teachers' instructional practices. Ongoing research at the Center for the Learning and Teaching of Elementary Subjects at Michigan State University will address these and related issues.

Footnotes

[1]Judgments of policy strength were based primarily on the (a) number of policies focusing on higher order outcomes and (b) level of coherence among those policies. To a lesser extent we also considered the breadth of attention to different subject areas. There is a good chance that the list of active states would have been longer if we had conducted more than one interview in each state or used a different set of criteria.

[2]The distinction between documents we classified as goals and objectives statements for teachers and those we labeled guidelines for local curriculum planners was based on stated intent. When the stated purpose of the document was to provide a framework for local curriculum planners' development of district curriculum guides, the initiative was classified as a guideline. When the document was aimed directly at teachers or at both teachers and local curriculum planners, it was classified as a goals and objectives statement.

[3]For a discussion of the origins of teachers' resistance to change, see Cohen (1988).

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